When the baby has not yet taken the breast (not yet latched on)

Jack Newman, MD, FRCPC

The child, offered the mother's breast,
Will not in the beginning grab it;
But soon it clings to it with zest.
And thus at wisdom's copious breasts
You'll drink each day with greater zest.

So nimmt ein Kind der Mutter Brust
Nicht gleich im Anfang willig an,
Doch bald ernährt es sich mit Lust.
So wird's Euch an der Weisheit Brüsten
Mit jedem Tage mehr gelüsten.

—Goethe. Faust. Mephistopheles speaking to the student

When the baby has not yet taken the breast (not yet latched on)

There is *hope*

There is hope…

- So do *not* tell the mother "if the baby hasn't latched on by day 3, he won't"
  - It's just not true!
- Do *not* suggest a nipple shield before the mother and baby leave the hospital
- *Do* everything to make sure the mother develops a good milk supply
  - Start expressing milk (as soon as it is decided the baby needs supplements or be fed off the breast)
  - Start blessed thistle and fenugreek?

Why *not* a nipple shield?

- One mother's story
  - First baby refused breast in hospital
  - Nipple shield suggested on *day 2* (????)
  - The baby is "breastfed" 3 weeks but does not gain weight and milk then "dries up"
  - I see the mother for her second baby because she has sore nipples but an *abundance* of milk (4 weeks postpartum)

Why *not* a nipple shield? Another mother…

- My baby was born at 5lb 8oz
  - I started using a breast shield when the baby was a few days old, after my milk came in...
  - seemed to go okay, but somewhere around 3 weeks I began to notice she didn't seem to be sucking properly and by her one month check up she'd only gained an ounce (28.5 g)

Email received October 3, 2005

- I have a 12 week old baby girl
- I breastfed for the first week after her birth with a nipple shield because I have very flat small nipples
- I started to pump from the second week because she was not getting enough milk with the nipple shield
- She has been on the bottle now for 11 weeks
- Is it possible to get her back to the breast and what is the success rate using a nipple shield? I really miss that feeling of having her close to me

Why *not* a nipple shield?

- As I will say several times during this talk:
- *The single most important factor that will determine if the baby latches on or not is the mother's developing an abundant milk production!*
- Practically speaking: nipple shields interfere with the milk production
- A baby on a nipple shield is not latched on and depends on milk ejection reflexes to get milk
- There is no evidence, *none*, that nipple shields, even "modern" ones, do not decrease milk production

Two things you must not do

1. You must *not* send the mother home from hospital on a nipple shield without early, certain, reliable, follow up with someone experienced in helping mothers getting the baby to latch on
2. Using a nipple shield before the milk is "in" is contraindicated!
   - Thus, using them before the mother leaves hospital is *inappropriate*!

And here is where we end up

A few important points

1. A baby will take the breast when he gets what he wants
   - What does he want? *Milk*!
   - Babies are not that complicated
2. An angry baby probably will not take the breast even if he is ravenous
3. It is worse than useless to try to force a baby to take the breast when he refuses
   - He will only get angrier or go limp

This baby has just latched on for the first time in his 1 week life. Why?

Because he went to the breast and got milk!

Skin to skin contact can make an angry baby calm down

More

- A good position facilitates a good latch
  - A good latch will help the baby get milk better from the breast
  - If he gets milk, he'll likely stay there
  - A good position is also more comfortable for the mother
- A baby who "takes the breast", sucks a couple of times and pulls off, or "falls asleep" did not take the breast at all

From an email

- "The nurses & lactation consultants in the hospital seemed to think that Chloe was latching on but 'for some reason' not sucking"
  - This is *not* latching on!
  - This is only *pretending* to latch on

If the baby takes only the nipple

But with a better latch…

A good position

Putting a baby to the breast

Not a bad latch

A better latch→asymmetric!

The light at the end of the tunnel

- Even if the baby doesn't take the breast right away, or even by 2 or 3 weeks, almost all babies will, by 4-8 weeks, *if the mother develops an abundant milk production*
- So two keys to making it work:

1. Make sure you do all for the mother to get a good production
2. Patience
   - *The most difficult*
   - Lack of patience is often the reason for the use of the nipple shield

Why would a baby not take the breast?

- Birth practices no doubt affect breastfeeding

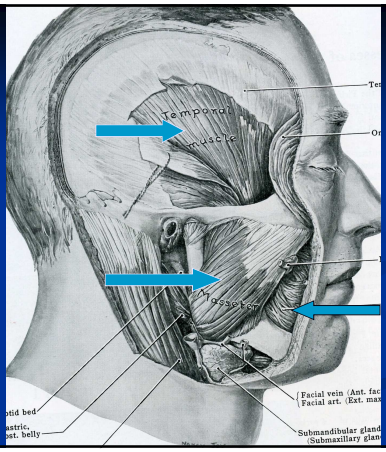
1. A delay in putting the baby to the breast, or insufficient time together may be a contributing factor (self attachment may take an hour or two)
2. Separation of mother and baby
3. Artificial nipples may interfere

Artificial nipples may interfere

- Mizuno K, Ueda A. Changes in sucking performance from nonnutritive sucking to nutritive sucking during breast- and bottle-feeding *Pediatr Res* 2006;59:728-31
  - "It is evident from the results of this study that bottle feeding is a completely different feeding method regardless of attempts to make bottle feeding more closely resemble breastfeeding"

Artificial nipples may interfere

- Gomes CF, Trezza EMC, Murade ECM, Padovani CR. Surface electromyography of facial muscles during natural and artificial feeding of infants *J Pediatr (Rio J)* 2006;82(2):103-9
- Essentially, the study shows that different muscles are involved in breastfeeding than in bottle feeding



How Birthing Practices Can Affect Breastfeeding

Jack Newman, MD, FRCPC

From *Surfacing* a novel by Margaret Atwood

- "…they want you to believe it's their power, not yours….They stick needles into you so you won't hear anything, you might as well be a dead pig, your legs are up in metal frames, they bend over you, technicians, mechanics, butchers, students, clumsy or sniggering practicing on your body, they take your baby out with a fork like a pickle out of a jar"

Another quote worth contemplating

- From Diane Wiessinger
- We have ample literature on birth in both domestic animals and zoo animals
- The resounding message for helpers in all the literature is: *If possible, stay out of the way*
- Mammalian mothers choose their own birthplace, usually somewhere secluded and quiet
- They experience all the sensations of labor
- They feel the delivery
- They smell the birth

Another quote worth contemplating

- They smell themselves on their babies
- They clean up from the birth themselves and never lose track of where their babies are
- The babies follow a pre-programmed behavior that leads them from vaginal outlet to nipple
- When any of these links is disrupted, there is a high likelihood that the mother will reject the baby or that the baby will be too confused to complete his role

Another quote worth contemplating

- The lesson that shouted out to me from all the literature I read—a lesson that took me 30 years to figure out—is that there's very little information on mammalian infant feeding
- *It's all about the birth*
- Following a normal birth, infant feeding just…happens
- Following an interventionist birth, the mother rejects the baby and there is no nursing at all
- Our hospital births break every rule in the mammalian list of mother-baby necessities

"Ideal" *hospital* birthing

1. The mother is supported during labour
2. Interventions are *not* a part of "normal" labour and birthing (revolutionary thinking?)
3. The mother is encouraged to walk around, choose her position of comfort while in labour
4. The mother is encouraged to eat and drink
5. The mother squats or finds her own position of comfort for the actual delivery
6. The mother and baby are kept together, skin to skin, after birth
7. No separation during hospital stay (or after)

1. Support during labour

- Studies show very clearly that if mothers get support during labour:
  - labour will be shorter
  - the mother will need less or no pain medication
  - she is less likely to have an episiotomy or cæsarean section
  - breastfeeding will more likely succeed
- It is not even necessary that the person offering support be trained
  - Another woman merely sitting in the room is enough

Study

- Kennell J, Klaus M, *et al.* Continuous emotional support during labor in a US hospital *J Am Med Assoc* 1991;265(17):2197-2201
  - Three groups
1. Support by trained doula
2. Another woman in room observing
3. Usual situation in North America

TABLE 3-1 Effects of Emotional Support During Labor

Outcome	Supported (n = 212)	Observed (n = 200)	Control (n = 204)	P Value
Narcotic analgesia	21.7%	28%	25.5%	no difference
Epidural anesthesia	7.8%	22.6%	55.3%	<.0001
Oxytocin augmentation	17%	23%	43.6%	<.0001
Duration of labor (mean)	7.4 hours	8.4 hours	9.4 hours	= .0001
Cesarean delivery	8%	13%	18%	= .009
Forceps delivery	8.2%	21.3%	26.3%	<.0001
Prolonged hospitalization of newborn	10.4%	17%	24%	<.001
Sepsis evaluation	4.2%	9.5%	14.7%	<.001
Maternal fever	1.4%	7%	10.3%	= .0007

Adapted from Kennell J, Klaus M, et al (1991). Continuous emotional support during labor in a U.S. hospital. A randomized controlled trial. *Journal of the American Medical Association* 265(17):2197–2201. Used with permission.

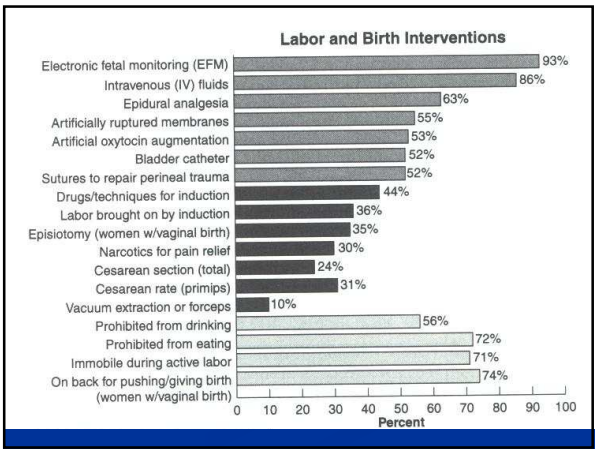
TABLE 3-2 Mothers' Responses at Six Weeks Postpartum on Infant Feeding

Mother Reports	Support Group (n = 74)		Control Group (n = 75)		P value
Is exclusively breastfeeding	38	(51.4%)	22	(29.3%)	0.01
Has a flexible feeding interval	60	(81.1%)	35	(46.7%)	0.0001
Has feeding problems	12	(16.2%)	47	(62.7%)	0.0001
Finds mothering easy	33	(44.6%)	8	(10.7%)	0.001
Baby has poor appetite	0	(—)	19	(25.3%)	0.001

Adapted from Hofmeyr GJ, et al. (1991).[16]

2. Interventions

- The following graph is derived from a *Listening to Mothers* survey of 1583 women who had babies between mid 2000 and mid 2002 and surveyed during May and June 2002



Let me make one thing clear

- I am not saying that we *never* have to intervene in the birthing process but:
- All medical interventions, *even when necessary*, decrease the mother's sense of control, and increase her sense of her "body not being up to the task"

2. Interventions

- <u>Electronic fetal monitoring (93%)</u>
- Mother has to be lying down

→increases risks of other interventions, which then increase risk of poor breastfeeding

- Increases anxiety (as do all machines and gadgets we use in hospital)
- No evidence that it prevents infant or maternal morbidity or mortality (on the contrary)

Is EFM necessarily good?

- Enkin M, Keirse M, Renfrew M, Neilson J. *A Guide to Effective Care in Pregnancy and Childbirth* 3rd edition Oxford University Press 2000
- Based on 12 randomized controlled clinical studies on EFM, representing over 58,000 (!) labouring women and comparing EFM to routine intermittent auscultation with a fetoscope

Results

- No evidence that perinatal death rates or low Apgar scores were improved with EFM
- In all studies, instrumental delivery and cæsarean section rates were higher in the EFM groups

2. Interventions

- Intravenous fluids (86%)
- An IV interferes with the mother walking around, assuming comfortable position
- May increase maternal and infant blood sugar→increase insulin secretion in the baby
- May increase the baby's birth weight→more likely to have the dreaded >10% weight loss
- May result in the mothers developing œdema of the areola→difficulty with latch (worsened by oxytocin?)

Fluid retention

- Oxytocin, being very similar to anti-diuretic hormone, causes the mother to retain fluid
- Shift of fluid from the vascular space that normally occurs after birth

+ IV fluids in large amounts

+ oxytocin infusion

= significant retention of fluid + oedema of the nipples and areolas

IV fluids and "excessive" weight loss

- Chantry CJ, Nommsen-Rivers LA, Peerson JM, *et al.* Excess weight loss in first-born breastfed newborns relates to maternal intrapartum fluid balance *Pediatrics* 2011;127:e171-e179
- Two main findings:

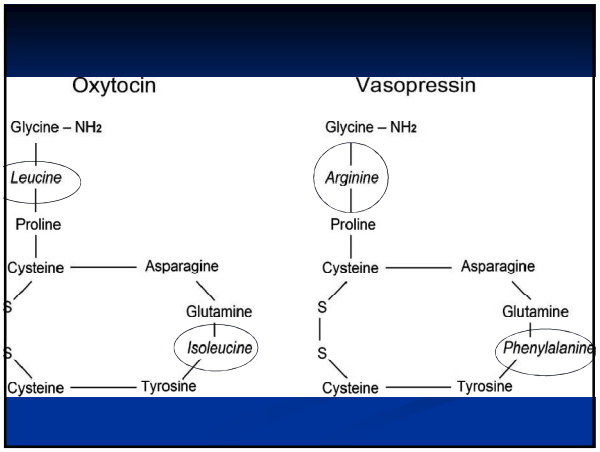
1. Higher rate of weight loss >10%
2. "The prevalence of EWL (excess weight loss) was significantly related to maternal intrapartum fluid balance"

I disagree with this statement in the article

- "Typically, loss of = or >10% of birth weight in the first few days suggests dehydration and the need to consider supplementation"
- "Consider" is the right word, but the way the statement is put makes it sound as if supplementation is necessary
- In fact, what is necessary is to help the mother and baby breastfeed well and only if the breastfeeding is not going well, then "consider supplementation"

So why might the baby lose "excess" weight?

1. When a baby is weighed on two different scales, errors in weighing can be significant
2. Weights can be read incorrectly or written down incorrectly
3. The baby is "over hydrated" and urinates more and so loses more weight
4. The mother's nipples and areolas are oedematous and thus the baby has difficulty latching on and getting milk from the breast



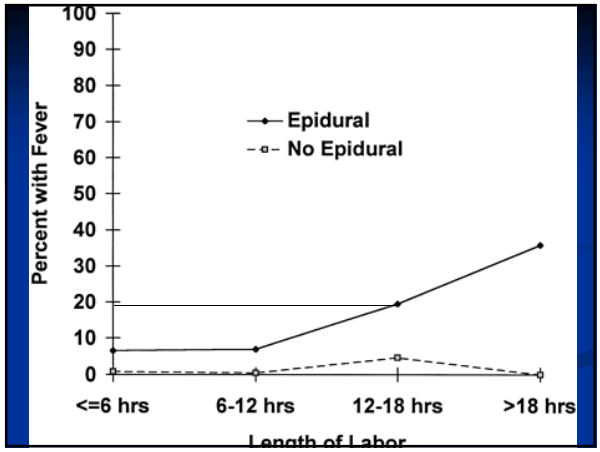
Oedema of the areola

2. Interventions

- Epidural anæsthesia (63%)
  - Requires intravenous and its possible interfering factors
  - Medication does get into the mother's blood and therefore to the baby
  - Mother cannot walk around and assume comfortable position
  - Increased risk of episiotomy, cæsarean section
  - Sometimes fails→pain, anxiety, even general anæsthesia

Epidural analgesia

- Lieberman E, Lang JM, Frigoletto F jr *et al.* Epidural analgesia, intrapartum fever and neonatal sepsis evaluation *Pediatrics* 1997;99:415-9
  - "Use of epidural analgesia during labor is strongly associated with the occurrence of maternal intrapartum fever, neonatal sepsis evaluations and neonatal antibiotic treatment"



Maternal fever

- Results in a cascade of events:

→maternal tachycardia
→fetal tachycardia
→scalp monitoring
→scalp pH
→extra fluids
→greater risk of instrumental delivery or caesarean section
→maternal antibiotics
→infant sepsis workup and antibiotics

Maternal fever

- After all is said and done

→delay in initiating breastfeeding and infant and maternal separation

- In some institutions

→no mother and baby contact because mother has fever

Epidural anæsthesia

- Lieberman E, Davidson K, Lee-Parritz A, Shearer E. Changes in fetal position during labor and their association with epidural analgesia *Obstet Gynecol* 2005;105:974-82
  - "Our demonstration of a strong association of epidural with fetal occiput posterior position at delivery represents a mechanism that may contribute to the lower rate of spontaneous vaginal delivery consistently observed with epidural"

Occiput posterior position

- Is associated with:
1. Lower rate of spontaneous vaginal delivery (¼ compared to ¾ of occiput anterior presentations)
2. Higher rate of serious perineal tears
3. Higher rate of postpartum wound infections
4. Lower 1 minute Apgar scores

Epidural anæsthesia

- Lieberman, E. Unintended effects of epidural analgesia during labor: a systematic review *Am J Obstet Gynecol* 2002;186:S31-68
  - Three *definite* effects of epidurals:
1. Increased incidence of maternal fever
2. Increased rate of instrumental delivery
3. Longer second stage

2. Interventions

- <u>Artificial oxytocin augmentation (52%)</u>
  - Requires IV and all that that entails
  - May result in fluid retention and even overload (oxytocin is anti-diuretic hormone)
  - May result in tonic contractions, increased pain, and increased need for other interfering interventions

Effects of oxytocin infusion

- Jonas W, *et al.* Effects of Intrapartum Oxytocin Administration and Epidural Analgesia on the Concentration of Plasma Oxytocin and Prolactin, in Response to Suckling During the Second Day Postpartum *Breastfeeding Medicine* 2009;4:70-82
  - "Oxytocin infusion decreased endogenous oxytocin levels dose-dependently. Furthermore, oxytocin infusion facilitated the release of prolactin. Epidural analgesia in combination with oxytocin infusion influenced endogenous oxytocin levels negatively."

2. Interventions

- <u>Episiotomy (35%)</u>
  - No evidence that it does what it's supposed to do (in fact, may increase risks of serious tears)
  - Increased pain
  - Increased risk of infection→antibiotics→candida
  - Less rapid healing→longer period of pain

Episiotomy

- Hartmann K, Viswanathan M, Palmieri R, Gartlehner G, Thorp J, Lohr KN. Outcomes of routine epsiotomy: A systematic review *J Am Med Assoc* 2005;293:2141-8
- A review of randomized control trials of routine episiotomy…that assessed outcomes in the first 3 postpartum months, along with trials and prospective studies that assessed longer term outcomes

Results

- Our systematic review finds no benefit from episiotomy
- We identified fair to good evidence suggesting that immediate outcomes following routine use are no better than those of restricted use
- …routine use is harmful to the degree that some proportion of women would have had lesser injury instead of a surgical incision

2. Interventions

- Induction of labour (36%)
- Intravenous→all that implies
- Induction

→failure to progress

→cæsarean section

→all that implies

Study

- Johnson DP, Davis NR, Brown AJ. Risk of cesarean delivery after induction at term in nulliparous women with an unfavorable cervix *Am J Obstet Gynecol* 2003;188:1565-72
- The induction of labor in nulliparous patients especially those with an unfavorable cervix…is associated with a significantly increased risk of cesarean delivery

2. Interventions

- Narcotic medication (30%)
- Loss of control
- Intravenous (in case blood pressure drops)
- Baby affected, does not suckle well
- Poor nursing

→interventions which undermine breastfeeding

- Meperidine (Demerol) worst of the lot

Study

- Righard L, Alade MO. Effect of delivery room routines on success of first breastfeeding *Lancet* 1990;336:1105-7
- 40 (57%) of the 72 mothers had received pethidine (Demerol) during labour; the infants were also sedated and most of them (25/40) did not suck at all
- It is suggested that…the use of drugs such as pethidine should be restricted

2. Interventions

- Cæsarean section (24% overall, 31% primips)
  - Intravenous→all that implies
  - Epidural, spinal or general anæsthesia
  - Increased problems with baby (transient tachypnæa→increased separation)
  - Pain→increased use of narcotics, difficulty finding comfortable position for breastfeeding

2. Interventions

- *All* interventions increase the risk of cæsarean section
  - Increased discomfort for mothers→less willing to breastfeed
  - Increased likelihood of mother-baby separation

→much less likely to have immediate skin to skin contact

- More likely to get medication (almost routine)

→"can't" breastfeed (analgesics, others)

→increased risk of candida (antibiotics)

Increased discomfort

- Declercq E, Cunningham DK, Johnson C, Sakala C. Mothers' reports of postpartum pain associated with vaginal and cesarean deliveries: results of a national survey *Birth* 2008;35(1):16-24
  - Of women with caesarean section:
  - 79% reported experiencing pain in the first two months after birth
  - Of these 33% described it as a major problem
  - 18% reported persistent pain into the 6th month after birth

Cæsarean section mothers less responsive to their babies?

- James E. Swain, Esra Tasgin, Linda C. Mayes, *et al.* Maternal brain response to own baby-cry is affected by cesarean section delivery *Journal of Child Psychology and Psychiatry* 2008;49:1042–1052
  - …this suggests that VD mothers are more sensitive to own baby-cry than CSD mothers in the early postpartum in sensory processing, empathy, arousal, motivation, reward and habit-regulation circuits

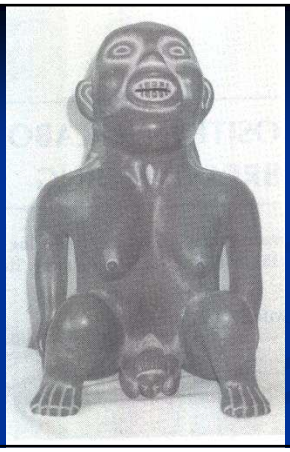
Position for birth

- The evidence shows that squatting works best for the second stage of labour
  - Gravity helps
  - Less chance of tears
  - Decrease length of second stage
  - Less chance of requiring interventions such as forceps, vacuum or cæsarean section
- Best is allowing mother to find *her* position of comfort
  - Mother on her back in stirrups is position of comfort for the health care provider

TABLE 4-1 Length of Second Stage (Pushing) and Delivery Method by Position

Variable	Second Stage (in mins)	Spontaneous Delivery	Assisted Delivery
Squatting primip (n = 105)	71	92%	8%
Semi-recumbant primip (n = 53)	95	83%	17%
Squatting multip (n = 92)	19	98%	2 %
Semi-recumbant multip (n = 47)	32	98%	2%

*Adapted from Golay et al. (1993). Table 1 from Golay J., The Squatting Position for the Second Stage of Labor: Effects on Labor and on Maternal and Fetal Well-Being. Birth 20:2 June 1993 © 1993 Blackwell Scientific Publications, Inc. Used with permission.



Skin to skin contact

- Babies who are skin to skin with the mother for 1-2 hours after birth:
  - are more likely to latch on (1)
  - are more likely to latch on well (2)
  - will cry less (3-5)
  - have higher blood sugars (5)
  - have higher skin temperatures (5)
  - will breastfeed longer and more exclusively (6-7)

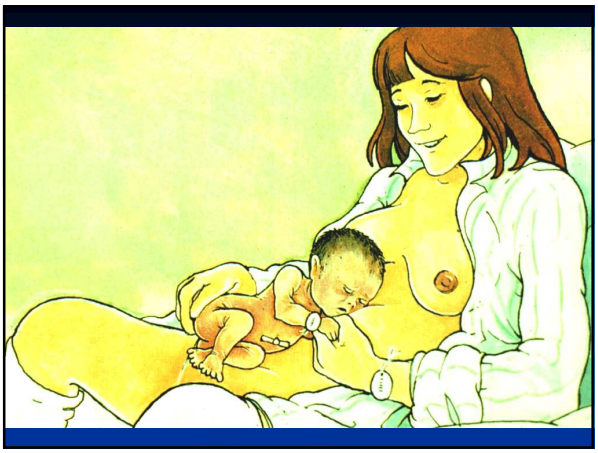
References

1. Righard L, Alade MO. Effect of delivery room routines on success of first breast feed *Lancet* 1990;336:1105-1107
2. Righard L, Alade MO. Sucking technique and its effect on success of breastfeeding *Birth* 1992;19:4:185-93
3. Christensson K, Cabrera T, Christensson *et al.* Separation distress call in the human neonate in the absence of maternal body contact *Acta Paediatr* 1995;84:468-734
4. Michelsson K, Christensson K, Rothgänger H, Winberg J. Crying in separated and non-separated newborns: sound spectrographic analysis *Acta Paediatr* 1996;85:471-55

References

5. Christensson K, Siles C, Moreno L, *et al* Temperature, metabolic adaptation and crying in healthy full term newborns cared for skin to skin or in a cot *Acta Paediatr* 1992;81:488-936
6. Mikiel-Kostyra K, Mazur J, Boltruszko I. Effect of early skin to skin contact after delivery on duration of breastfeeding: a prospective cohort study *Acta Paediatr* 2002;91:1301-67
7. Kramer M, Chalmers B, Hodnett ED *et al.* Promotion of breastfeeding intervention trial *J Am Med Assoc* 2001;85:413-20

Self Attachment



All the preceding discussed birth practices decrease the chances of self attachment

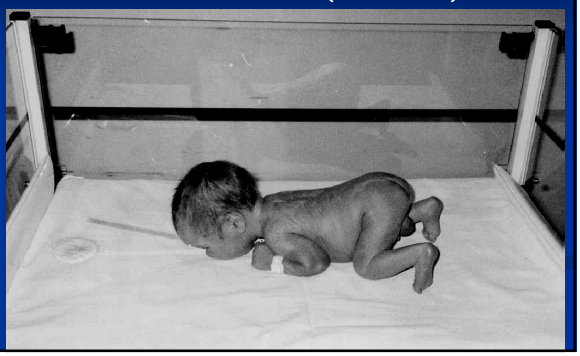
Self Attachment

- Depends partly on smell
- Varendi H, Porter RH, Winberg J. Does the newborn find the nipple by smell? *Lancet* 1994;344:989-90
  - Babies find their way to the unwashed nipple!
  - 5/30 did not self attach
  - 22 out of the other 25 went to the unwashed nipple
  - Our obsession with cleanliness may interfere with a normal natural process

Another study on going to the breast by smell

- Varendi H, Porter RH. Breast odour as the only maternal stimulus elicits crawling towards the odour source *Acta Pædiatrica* 2001;90:372-5
  - Baby is set between two breast pads, one new, one that was in contact with the mother's breast (not areola or milk)
  - See next slide

Going to the pad in contact with mother's breast (not milk)



So let's consider this…

- We are always talking about the mother's choice to give breast or bottle
- But these results seems to imply, amongst other things, that if the baby expresses his or her choice, *the baby would choose the breast*

If washing the nipple can make a difference…

- Imagine what deep suctioning of the baby can do
- Widström A-M, *et al* Gastric suction in healthy newborn infants *Acta Paediatr Scand* 1987;76:566-72
- "In the control group, spontaneous sucking and rooting movements started to occur 15 minutes after birth…and the infants found the nipple and started to suckle about 55 minutes"
- "This sequence…was disrupted in children undergoing gastric suction"

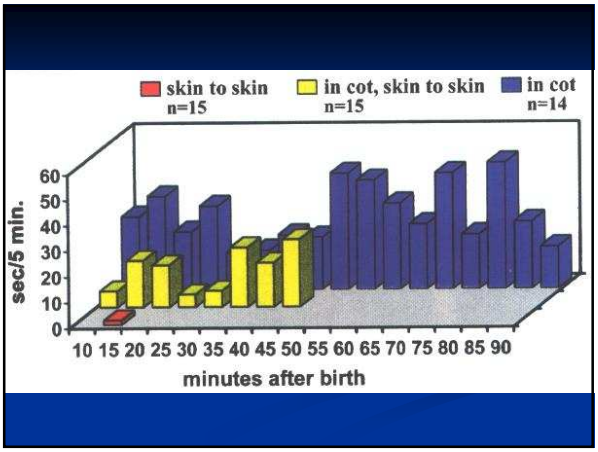
Responses of the newborn

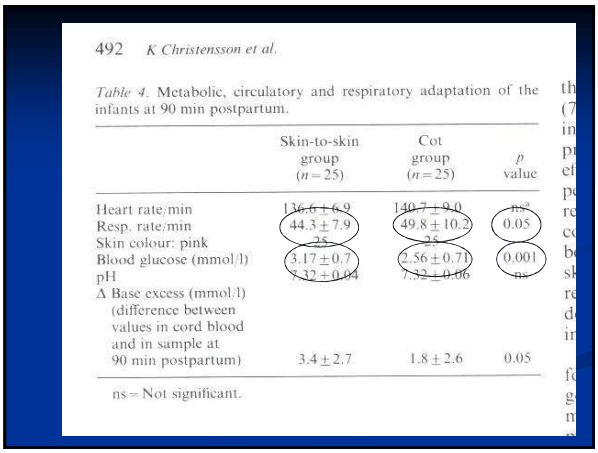
- We know that newborn babies:
- Find the breast by smell
- Recognize their own mother's voice
- Respond better to their own mother's face
- Utter separation distress calls in the absence of maternal body contact

References

1. Bushnell JWR, Sai F, Mullin JT. Neonatal recognition of the mother's face *Br J Dev Psych* 1989;7:3-15
2. Fifer WP, Moon CM. The role of the mother's voice in the organization of brain function in the newborn *Acta Pædiatr* 1994;Suppl 397:86-93
3. Christensson K, *et al.* Separation distress call in the human neonate in the absence of maternal body contact *Acta Pædiatr* 1995;84:468-73

Skin to skin contact





492 *K Christensson et al.*

Table 4. Metabolic, circulatory and respiratory adaptation of the infants at 90 min postpartum.

	Skin-to-skin group ($n=25$)	Cot group ($n=25$)	p value
Heart rate/min	136.6 ± 6.9	140.7 ± 9.0	ns
Resp. rate/min	44.3 ± 7.9	49.8 ± 10.2	0.05
Skin colour: pink	25	25	
Blood glucose (mmol/l)	3.17 ± 0.7	2.56 ± 0.71	0.001
pH	7.32 ± 0.04	7.32 ± 0.06	ns
Δ Base excess (mmol/l) (difference between values in cord blood and in sample at 90 min postpartum)	3.4 ± 2.7	1.8 ± 2.6	0.05

ns = Not significant.

The two studies

1. Christensson K, Cabrera T, Christensson E, Uvnäs-Moberg K, Winberg J. Separation distress call in the human neonate in the absence of maternal body contact *Acta Pædiatr* 1995;84:468-73
2. Christensson K, Siles C, Moreno L, *et al.* Temperature, metabolic adaptation and crying in healthy full-term newborns cared for skin-to-skin or in a cot *Acta Pædiatr* 1992;81:488-93

But won't the baby get cold?

- Not according to several studies
- Bystrova K, Windström A-M, Matthieson A-S, *et al.* Skin to skin contact may reduce negative consequences of "the stress of being born": a study on temperature in newborn infants subjected to different ward routines in St. Petersburg *Acta Paediatr* 2003;92:320-6

Three groups in study

- All babies were treated the same during the first 20 minutes (usual hospital routine)
- Then for the next 90 minutes:

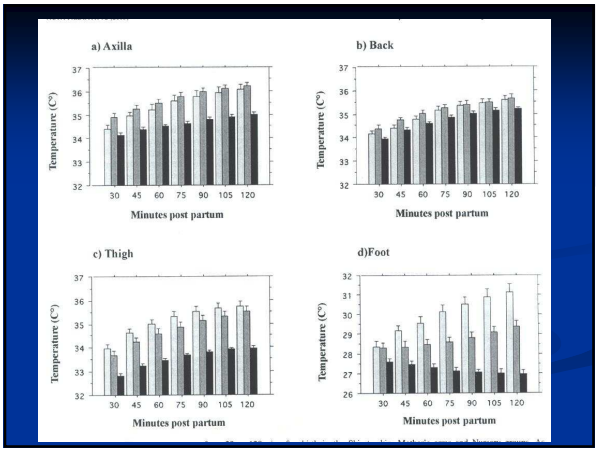
1. Skin to skin with the mother
2. In the mother's arms, but wrapped up or dressed
3. In a bassinette in the nursery, wrapped up or dressed

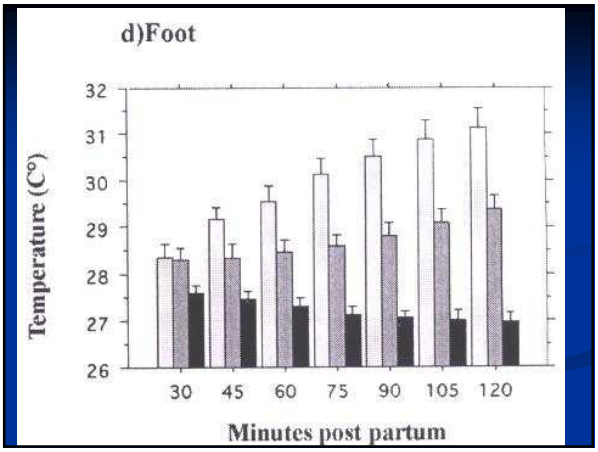
Result?

- The babies maintained their body temperatures better when skin to skin with the mother!

In the following graphs

- Light grey: skin to skin
- Darker grey: mother's arm
- Black: nursery group





Even in premature babies

- Bergman NJ, Linley LL, Fawcus SR. Randomized controlled trial of skin-to-skin contact from birth versus conventional incubator for physiological stabilization in 1200-2199 gram newborns *Acta Paediatr* 2004;93:779-785

Two groups

- All babies were put skin to skin on the mother after birth. After the five minute Apgar, if stable (monitored continuously), they were divided→

1. Skin to skin care (SCC) for 6 hours
2. Transferred to incubator and "usual" care

Parameters

- All babies were monitored and watched for parameters exceeded

1. Skin temperature below 35.5°C for two consecutive recordings
2. Heart rate <100 or >180 for two consecutive recordings
3. Apnea >20 seconds
4. O2 saturation <87% despite support
5. Blood glucose <2.6 mmol/l confirmed by lab

SCRIP score

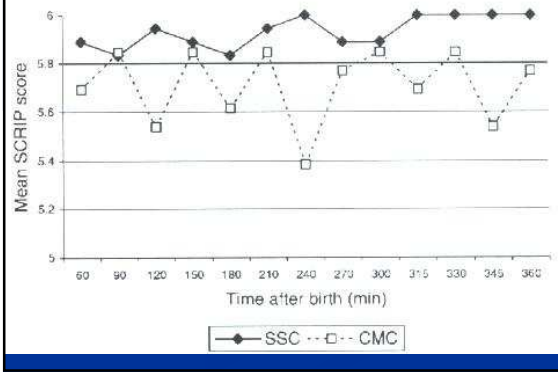
Stability of the cardiorespiratory system in premature infants (SCRIP-Score)

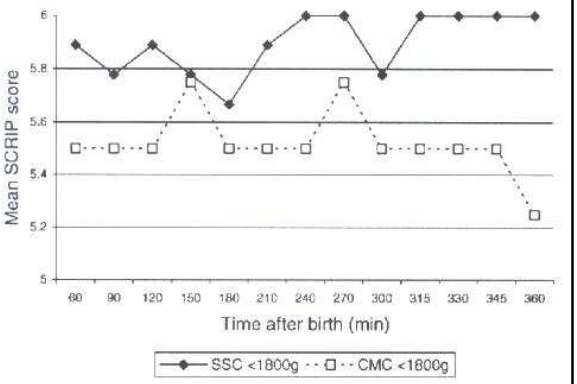
	Points		
	2	1	0
(A) Heart rate	Regular	Deceleration of heartrate >80 bpm<100 bpm	Bradycardia <80bpm and/or tachycardia >220 bpm=1 min in quiet sleep
(B) Respiration	Regular	Apnea <10 s and/or periodic breathing (=apnea>3 s, regular respiration <20 s, at least 3 times)	Apnea >10 s and/or tachypnea >80 bpm=1 min in quiet sleep
(C) Oxygen saturation (pulse oximetry)	Regular >90%	Falls <90% >80%	falls <80%

Cardiorespiratory stability: A+B+C, measured for every 5-min period, pneumogram set at 1 cm/min.

Table 3. Outcomes of transfers and exceeded parameters.

	SSC ($n = 20$)	CMC ($n = 14$)	χ^2
H1a Transferred to NICU	2 (10%) ($n = 18$)	1 (7%) ($n = 13$)	0.773 n.s.
H1b Exceeded parameters	3 (17%)	12 (92%)	<0.001
Temperature <35.5°C	1	8	0.006
Heart rate <100, > 180 bpm	0	0	n.s.
Apnoea >20 s	0	1	n.s.
Oxygen saturation <89%	1	0	n.s.
Blood glucose <2.6	1	3	0.02





Forcing a baby to the breast

- Surely one of the major reasons for breast refusal
- "The baby must feed every three hours"
  - Where did this come from?
  - Where are the data to support such an absurd idea?
- But on the basis of this "rule", babies are being forced to the breast every three hours even if they don't want to nurse

Normal breastfeeding

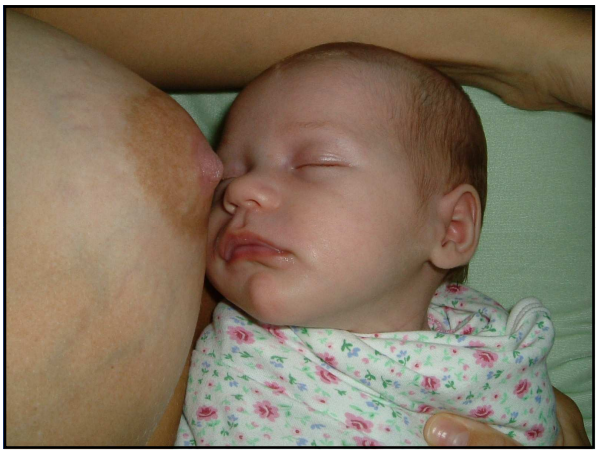
- There are no studies supporting the notion that normal healthy babies need to feed every three hours
  - Many actually go to the breast *more* often

→this *also* becomes a problem

  - One size fits all is *not* natural or normal, and does nobody any good

Nipple problems

- Nipples can be large, flat, or inverted
  - Though if the truth be told, I don't believe there exists something called "flat nipples"!
  - But these types of nipples should *usually* make breastfeeding only more difficult, not impossible
  - If you tell the mother her nipples are not up to the task, she may be believe you and not persist with trying to nurse

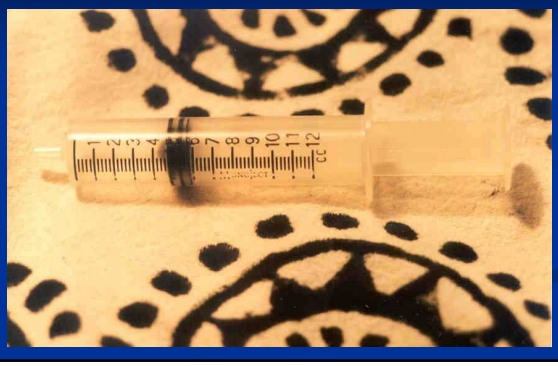


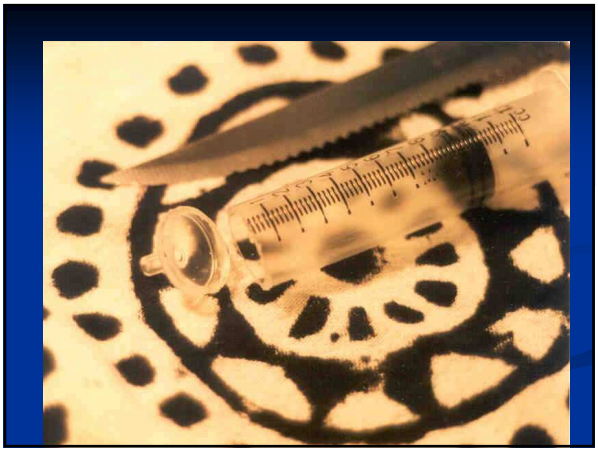
Lactation consultant diagnosed "slightly" inverted right nipple

Flat nipple?

Nipples change, breasts change, babies change and what is not possible today may be possible tomorrow, and if not tomorrow, next week

Making a nipple everter





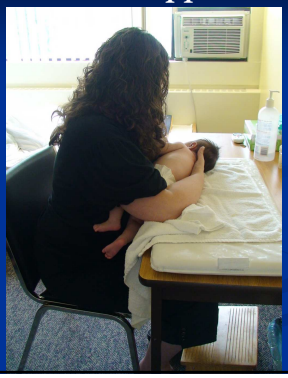
Breast engorgement

- The baby who was "doing fine" during the first few days, and then refuses the breast when the mother becomes engorged, probably wasn't doing fine at all during the first few days
  - He was just pretending to latch on and then when it became more difficult, he just couldn't pretend any more

Very large breasts

- This is mostly a mechanical problem, due to the fact that the mother has difficulty manipulating her breasts and/or the baby, strictly because of the size of the breasts
  - However, women with very large breasts also often have "flat nipples"
  - Again, maintaining an abundant supply of milk, persistence and imagination will usually result in the baby taking the breast

Using the table to support the breast

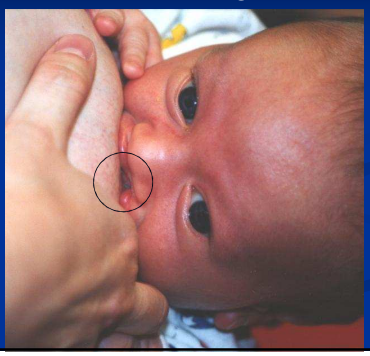


Problems with the newborn

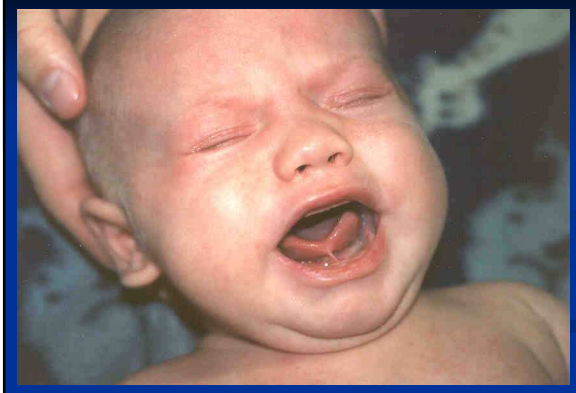
- Babies with neurological problems
  - Abnormalities of the face, mouth, tongue and palate
  - Cleft lip, cleft palate
  - Tongue tie
  - The effects of maternal medication, vigorous suctioning and other manipulations during the labour and birth

Cleft of the soft palate

Baby breastfeeding with cleft lip and alveolar ridge



Tight frenulum



Study from the ENT literature

- Messner AH, et al. Ankyloglossia: incidence and associated feeding difficulties *Arch Otolaryngol Head Neck Surg* 2000 Jan;126(1):36-9
- 1041 newborns examined
- Incidence of 4.8% of newborns (N=50)
- Males > Females (2.6:1 ratio)

Results

- 25% affected infants had difficulty breastfeeding
- 3% of control infants had difficulty breastfeeding
- $p<0.01$
- No frenotomies performed
- Conclusion: ankyloglossia can negatively impact breastfeeding

Another study

- Ballard JL, Auer CE, Khoury JC. Ankyloglossia: Assessment, incidence and effect of frenuloplasty on the breastfeeding dyad *Pediatrics* 2002;110 www.pediatrics.org/cgi/content/full/110/5/e63
- Significant improvement in both latch and/or nipple pain when frenotomy done

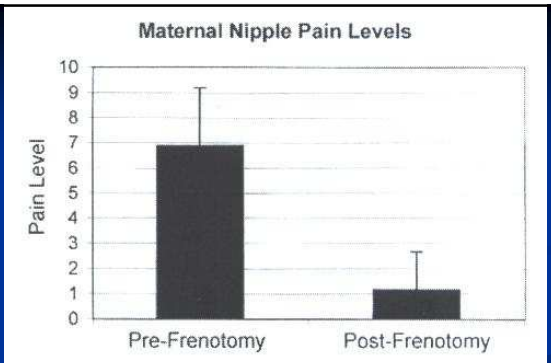


Fig 3. Maternal nipple pain before and after the frenuloplasty. Pain levels decreased significantly after the procedure.

A few more articles

- Hogan M, Westcott C, Griffiths M. Randomized controlled trial of division of tongue-tie in infants with feeding problems *J Paediatr Child Health* 2005;41:246-50
- Amir LH, James JP, Beatty J. Review of tongue-tie release at a tertiary maternity hospital *J Paediatr Child Health* 2005;41:243-45
- McBride C. Tongue-tie. (editorial) *J Paediatr Child Health* 2005;41:242

Anecdote

- Email regarding a 7 week old
- "Though the tongue tied appeared to be minimal, it was indeed interfering with breastfeeding. I noticed an improvement immediately in terms of contact with my nipple. It took a little time for her to learn she did not need to feed constantly. She is now 7 weeks and everything is much better. Better latch, more efficient feedings, less gas and longer periods of sleep."

Anecdote

- Email regarding a 5 month old
- "So now, to try to summarize, Just 2 wks ago I finally got to see a pediatrician who clipped her tongue. The latch was totally amazing immediately!!!! Emmaly nurses great now and it can even be noted drinking from the bottle the difference as it used to take her up to an hour to drink a bottle and now she can just 'suck it back' no problem."

Review of literature

- Hall DMB, Renfrew MJ. Togue tie *Arch Dis Child.* 2005;90:1211-15
- Several conclusions, none definite, but:
- "The diagnosis should rest primarily on observation and analysis of feeding difficulties rather than the static appearance of the tongue"

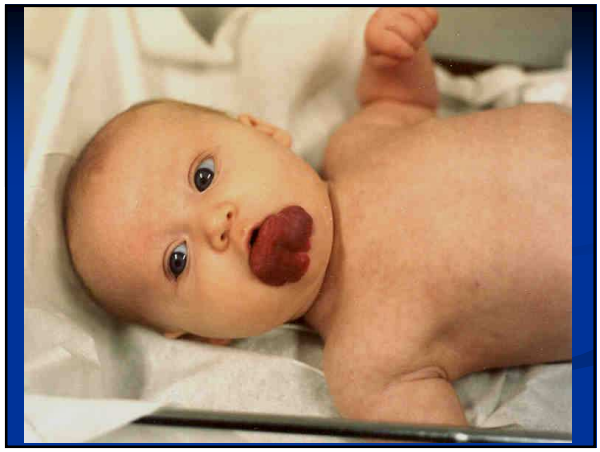
Yet another study, with *mock* clipping of the frenulum

- Dollberg S, Botzer E, Grunis E, Mimouni F. Immediate nipple pain relief after frenotomy in breastfed infants with ankyloglossia: a randomized prospective study *J Pediatr Surg* 2006;41:1598-1600
  - "There was a significant decrease in pain score after frenotomy than after sham (p=0.001)"
  - "Frenotomy appears to alleviate nipple pain immediately after frenotomy"

Study using ultrasound

- Geddes DT, Langton DB, Gollow I, *et al.* Frenulotomy for breastfeeding infants with ankyloglossia: effect on milk removal and sucking mechanism as imaged by ultrasound *Pediatrics* 2008;122:e188-e194
  - Conclusion: "Infants with ankyloglossia experiencing persistent breastfeeding difficulties showed less compression of the nipple by the tongue postfrenulotomy, which was associated with improved breastfeeding defined as better attachment, increased milk transfer and less maternal pain"

Show video clip: Tongue Tie Release



Pierre Robin Syndrome

So, if the baby doesn't latch on?

- First of all: Don't panic!
  - Until 30 years ago, or so, babies were not to be fed for the first 24 hours
  - The world did not end, though it was an absurd policy
  - Many babies don't latch on during the first day and do the second
  - Patience!
  - Assure a good milk supply

Assuring a good supply

- How?
  - As soon as there is talk of feeding the baby off the breast or supplementing, or doing anything but exclusive breastfeeding, start expressing
  - Start fenugreek and blessed thistle
  - It's a delicate situation: starting all these interventions without discouraging the mother!

Hands on

- There are those that help the mother without touching her or the baby
  - I find it best to put "hands on"
  - Because I can often get the baby to take the breast
1. Some babies take the breast once, and never look back
   - Especially early on
2. The mother knows the baby can do it
3. But once again, it's a delicate situation

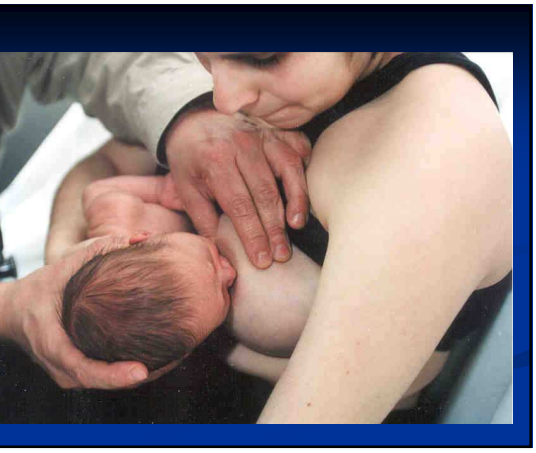
Which breast to try?

- Many babies prefer one breast to the other, so start with that one
  - Often because there is more milk in that one, or the nipple is easier to grasp
  - A right handed mother usually finds the left side easier
  - If the baby doesn't seem to have a preference, start with the side *you* find easier

The "move"

- Get the best position possible and bring the baby onto the breast
- As the baby comes onto the breast, his mouth around the areola, *compress the breast* so that the baby gets a gush of milk

Putting a baby to the breast

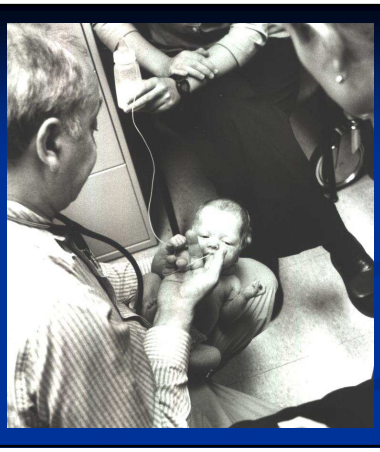


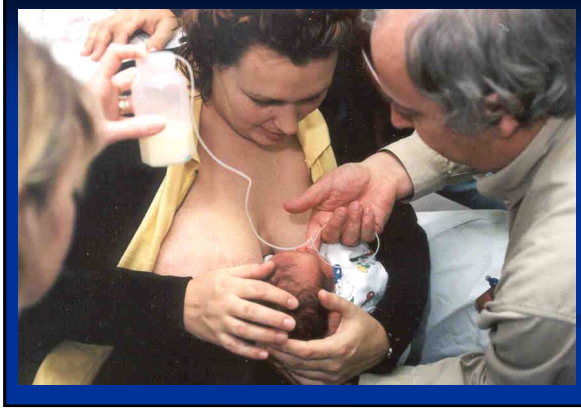
Nota bene!

- If the baby does not take the breast, don't keep forcing him to stay in the breast
  - Let him come off and try again
  - Forcing will not make him take the breast
  - It doesn't take 20 minutes to figure out the baby isn't going to take the breast
  - Try the other side, but don't persist until everyone is crying and/or exhausted

Finger feeding

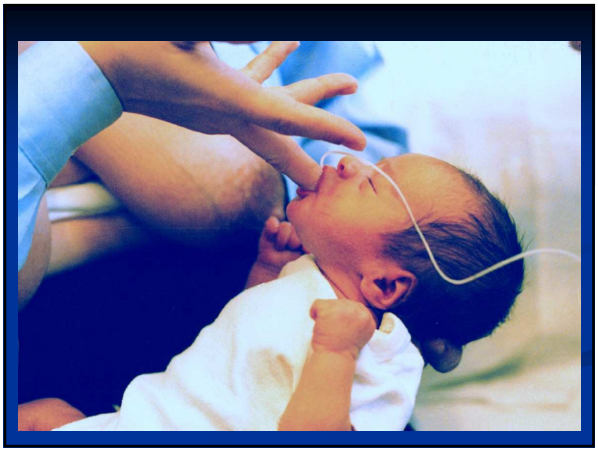
- This is the moment to try finger feeding
  - Finger feeding calms the baby down
  - The baby sucks on the finger in a fashion similar to what he should do on the breast
  - 30 seconds, a minute or two at the most, that's all that need be done before retrying to get the baby onto the breast





What's the point of finger feeding?

- We prepare the baby to take the breast!
  - Use the largest finger possible, so that the baby opens up wide
  - The index finger is a good choice
  - No need to use a syringe
  - No need to use tape on the finger



Show finger feeding video clip

How long do we keep at it?

- Until the baby calms down or wakes up
- Until the baby is sucking well

→This takes a minute or two *at most*

- The mother feels the baby wrap his tongue around her finger, and draws backwards
- The milk will move down the tube at a good speed
- Once the above are happening

→over to the breast

Don't forget…

- The principle reason for using finger feeding is to prepare the baby to take the breast, ***not to avoid artificial nipples***
- Cup feeding is better to avoid the bottle
- If the baby actually is latching on, finger feeding is not an appropriate method of supplementing
- In this situation, supplementation should be done with a lactation aid ***at the breast***

Video of baby cup feeding

Using the lactation aid

- By increasing the flow of milk at the breast, the lactation aid encourages the baby to take the breast
- It's worth a try, though getting the baby to take the breast in this way requires skill and experience
- By trying the helper gains experience and skill

Show video clip "finger feed to latch"

Inserting the tube

1. The helper aligns the tube with the end of the mother's nipple
2. The tube should be full of milk
   - it will be if just used for finger feeding
   - so that the baby gets milk with the first suck

It's not working

- Of course, nothing works *every* time
- Go back to finger feeding and try again
- Still not working?
- Okay, give it a break, try again later
- Encourage the mother
- What doesn't work today can work tomorrow or next week
- Exhausting everyone is not the idea here
- Finish the feeding with cup feeding

On discharge from hospital

- It is not shameful to send home a mother finger feeding or cup feeding,
- *as long as the mother and baby have arrangements for early followup by someone who knows what they are doing*
- Once the mother's milk comes in, the baby often latches on especially with good help
- ***Don't miss this opportunity!!***

At home

- The mother tries the baby at the breast with the best positioning possible, and the best latch, compressing the breast as the baby comes on
- If it doesn't work

→Let the baby come off the breast and try again

- Not working?
  - Finger feed to calm the baby and try again
- Try the lactation aid at the breast, but she will probably need help (father, MIL, etc)

Still not working!

1. Lie down with the baby in the evenings, nights, whenever the baby is calm, skin to skin, mother undressed from the waist up, the baby in diaper only
2. Try the baby on his back, the mother leaning over him
3. Or in the bath together
4. Skin to skin as much as possible, even when the mother carries the baby, which she should do a lot
5. And "baby led, mother guided" latching

Show video clip of baby led, mother guided latching on

But…

- There comes a time when increasing or maintaining the milk supply is *more important* than avoiding a bottle
  - For some, this comes after 4 days, for others longer, but the mother should not spend all her time finger feeding
  - More important to increase the supply, because with an abundant supply the baby will usually take the breast anyway, even if fed by bottle

Reminder

- In hospital, when do we start expressing?
  - As soon as we are thinking of feeding the baby other than exclusively at the breast
  - Hand expression is often easier and more effective than using a pump
  - We must use whatever the mother expresses, even two drops→**message!**
  - ***An abundant milk supply is the single most important factor that will determine the baby's taking the breast***

Finger feeding

- The technique can be very slow
  - It may work fine the first few days when the baby doesn't need much, but once the baby's needs increase, it may take a long time to feed the baby by finger feeding
  - Raising the bottle may help
  - The mother can use the cup after to finish the feeding, using finger feeding only just before a feeding to prepare the baby

But it's difficult…

- Okay, forget finger feeding, except for a few seconds or a minute before the attempt at the breast
- It's more important to maintain or increase milk production than to avoid a bottle
- About two weeks of age, many babies respond to a change

Therefore…

- It is more important to express more often and more effectively than to avoid a bottle and spend hours finger feeding
- Fenugreek and blessed thistle should be used early
- Domperidone is a good drug for increasing milk supply, even if the mother is able to express all the milk the baby needs

After all is said and done…

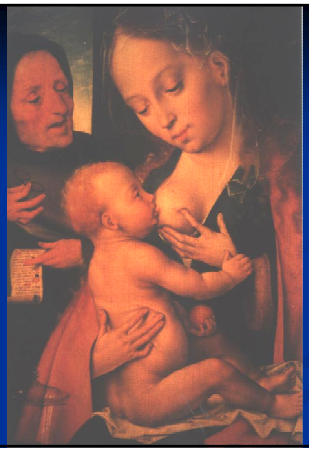
- Breastmilk in a bottle is better than formula in a bottle—this is not an excuse to stop trying
- The baby may eventually take the breast, between 4 and 8 weeks of age, sometimes older (sometimes *much* older, 9 months of age)
- A nipple shield rarely *may* help, but wait until the baby is older (2 or 3 weeks of age) and the milk supply is abundant, but, we have not suggested a nipple shield for many years
- We generally are trying to get the baby off the nipple shield

From an email

- My son is 4½ months old
- I had a significant amount of trouble breastfeeding him for the first months and was essentially pumping and feeding him bottled EBM for most of that time
- I continued to work hard at getting him to take the breast, and at about the 3/3½ month mark, things were turning around and he was getting better at breastfeeding
- For the past couple of weeks, I have been weaning him off the bottle and onto more and more breast

One month old, finally!

Think outside the box



Case #1: A fairly typical case

The mother

- 41 years old, from England, P2G1A1
- Pregnancy through *in vitro* fertilization
- Hypertension during the pregnancy
- Pyelonephritis 3 weeks before the baby is born
- Breasts enlarged only a little during the pregnancy
- 30 hour labour with epidural

The baby

- "Mucousy" at birth but that passes quickly
- Tried at breast immediately after birth, but baby does not take it
- Took breast a couple of times during the hospitalization but not usually (did he?)
- Fed by cup, expressed colostrum diluted in sugar water
- No formula

On discharge

- The baby weighs 3.04 kg (6lb 11oz)
  - He was 3.26 kg at birth (7lb 3oz)
- The mother receives a discharge pack containing samples of infant formula!
  - Why does my head hurt?

Once home

- The mother and baby are seen by two lactation consultants who are unable to help her get the baby onto the breast
- The mother is taught finger feeding
- The mother develops mastitis for which she is put on cloxacillin

First visit to our clinic

- The baby is 23 days of age
- The baby is being finger fed only, exclusively breastmilk
- The baby weighs 3.6 kg (7lb 15oz) (3.04 kg or 6lb 11oz on discharge at day 3)
- The mother is worried her milk supply is diminishing significantly

Results of first visit

- Impossible to get the baby to take the breast
- Plan:
  - The mother is to continue what she is doing
  - I prescribe her domperidone, 20 mg qid (we would now use 30 mg tid)
  - Could the mastitis have anything to do with her apparent decrease in supply?

Second visit to clinic

- The baby is 26 days old
- The baby weighs 3.705 kg (8lb 2oz)
- The mother has not been able to get the baby to take the breast
- With the lactation aid, I was able to get the baby to latch on, but only briefly
- Keep trying at home

Third visit to clinic

- The baby is 33 days old
- The baby weighs 3.98 kg (8lb 12oz)
- The mother has been unable to get the baby to take the breast at home
  - We are able a little, with the lactation aid at the breast
  - In other words, nothing has changed

Now what?

- We suggest:
  - Try the bottle or a nipple shield
  - Keep trying the baby at the breast when the baby is calm
  - Have confidence, don't give up
  - Your milk supply is great and the baby will take the breast between 4 and 6 weeks of age!

Fourth visit to clinic

- The baby is 47 days old
- The baby weighs about 500 grams more (slightly over 1lb more than last time), but I lost the exact weight
- The baby has taken the breast with the nipple shield and been fed like this exclusively since last visit
- We get the baby onto the breast without a nipple shield and he does beautifully (finally)

Followup (by phone)

- The mother has been breastfeeding exclusively since the last visit, without using a nipple shield
- The baby has been gaining weight well
- Followup was done about a month after the baby was last seen

Some questions

- Should we have suggested the nipple shield before the third visit?
- Is it the nipple shield that made the difference?
  - After all, the baby latched on at 47 days (just over 6 weeks of age)
- The most important issue, as usual, was maintaining the milk supply
  - It is for this reason nipples shields should *not be used before the milk comes in*

Case #2: Breast rejection followed by "nursing strike"

The mother

- 27 years old, P1G1
- Favourable home circumstances, supportive family
- Pregnancy unremarkable
- Labour at 39+ weeks, baby is transverse, but turns spontaneously

In the immediate postpartum

- Baby has minor respiratory difficulties at birth
- Baby is in NICU for two hours
- Gets antibiotics for two days
- Mother has a significant laceration, develops cystitis, is on antibiotics

Breastfeeding

- The baby is tried on the breast at about 3 hours after the birth, but the baby refuses
- The mother does not know if the baby received anything before 3 hours
- Finger feeding is commenced very early (just after 3 hours) using 5% glucose
- Expressing of milk?

First visit to clinic

- The baby is 9 days old
- The mother is doing some finger feeding, some bottle, mostly expressed milk
- The baby weighs 3.55 kg (7lb 13oz) (birth weight 3.5 kg or 7lb 11oz)
- The mother has very large breasts, "flat nipples"
- The baby takes the breast easily

What do we teach the mother?

- The technique of latching on
- When the baby starts getting sleepy at the breast, use compression to keep up the milk flow, then the lactation aid if necessary to keep up the flow of milk, and keep the baby breastfeeding

Plan

1. Finger feed to prepare the baby for the breast (1-2 minutes maximum)
2. Then over to the breast, keeping the baby breastfeeding, using the lactation aid if necessary, but better if the lactation aid can be avoided
3. Return in 1 to 2 days if it's not working

Second visit to clinic

- The baby is 10 days old
- The baby weighs 3.57 kg (7lb 14oz) (20 grams more than the day before)
- The mother is unable to get the baby to take the breast
- We did get him to take the breast with the lactation aid
- Courage, keep at it, he'll do it

Third visit to clinic

- The baby is 16 days old
- He weighs 3.69 kg (8lb 2oz)
- The baby takes the left breast very well, takes the right one a little
- ***He drinks at the breast***
- The mother now has sore nipples
- Why? What do we do?

Sore nipples

- *Fix the latch*
- All purpose nipple ointment made up of:

1. Mupirocin 2% ointment 15g
2. Betamethasone 0.1% ointment 15g
3. To which is added miconazole powder to a final concentration of 2% miconazole

Fourth visit to clinic

- We had asked the mother to return only if necessary
- Baby is 38 days old and is exclusively breastfeeding
- He weighs 4.66 kg (10lb 4oz) (3.69 at 16 days)
- Mother wants to learn how to nurse lying down, so we show her
- Return prn

Fifth visit to clinic

- The baby is 10 weeks old
- He is on a nursing strike (he refuses the breast)
- We give the usual advice

"Nursing strike"

- Characteristics
- The baby is obviously hungry, but refuses the breast, pushing away and crying
- May occur suddenly, the previous feeding going very well
- Or it may occur almost without noticing, with more and more feedings going badly over weeks until the baby is refusing most of the time

Typically…

- The mother has an abundant milk supply, even "overabundant"
- A nursing strike occurs at 3 months of age and 8 months, but can occur anytime
- During the first few weeks, the baby often chokes at the breast, comes off crying
- Then things settle, breastfeeding goes well for a while, then, a nursing strike

However…

- The baby almost never stops breastfeeding completely
- Usually he will feed a few times a day, typically when he is half asleep during the day, or at night, even if not sleepy
- Often he'll breastfeed if the mother gives him a pacifier to suck for a while before trying him at the breast or if the mother carries him in breastfeeding position for a while before trying him at the breast
- This is not a reason to start a pacifier

Please note!

- It is usual for the baby to continue gaining weight even if he nurses only a few times a day
- Things get better spontaneously almost always, usually within a week or two, but there are exceptions who take much longer
- Forcing the baby to take the breast usually is futile and frustrating for everyone
- This is *not* the time to start a bottle
- even with expressed breastmilk
- If the baby is not gaining weight, it's not a nursing strike!

This problem is *not* caused by:

1. Thrush
2. Otitis media
   - Typically, the baby is quite happy to suck his hand and cries only if the mother tries to feed him
   - Furthermore, he *will* take a bottle quite happily unless he's never taken one before
3. Reflux
4. Allergies

What to do?

1. Reassure the mother the baby will not get sick and will not dehydrate (wet diapers!)
   - If a baby is gaining weight, he can't be dehydrated!
2. Try not to give bottles
   - if necessary to give more, use cup or spoon)
3. Don't try to force the baby to take the breast
   - Let him suck his hand and try to get him to take the breast at favourable moments

When is it favourable?

- When the baby is sleepy, or waking from a sleep
- At night or during naps (skin to skin in bed)
- While the mother walks him in breastfeeding position
- Don't start pacifier, but if the baby already has one, use it to get the baby sucking for a while, and then over to the breast

What will likely happen?

- Usually the baby will go back to normal within a few days or a few weeks, sometimes from one feed to the next, sometimes slowly
- Sometimes they never get back to usual, but they breastfeed well enough
- If the mother is frustrated, she can try cup or spoon, or if the baby is older (over 4 months of age), she can start solids, mixing her milk in with the baby's solids

Make sure…

- That this is *not a problem of a diminished milk supply*, which can result in the exact same clinical picture
- If I'm not sure, I will try domperidone to increase the milk supply
- Increasing the milk supply will not make the strike worse, and if it truly is a decrease in supply, should help considerably

What might decrease the milk supply?

- Possibilities:

1. The mother goes on the birth control pill
2. The mother is pregnant
3. Maternal medications other than hormones
4. Maternal illness
5. Can an emotional "shock" dry up the milk?

What might decrease the milk supply?

6. Feeding one breast only at each feeding
7. Using bottles more than occasionally
8. Mother trying to be a "supermother"?
9. Other (unknown or same as 10.?)
10. Babies pull away from the breast when the flow slows down

- See the information sheet Slow Weight Gain after Early Good Weight Gain at our website www.nbci.ca

How does 10. result in late onset slow weight gain?

- If the baby pulls off when the flow slows, the baby does not "drain" the breast

→the milk supply decreases a little

- Over weeks, the milk supply continues to decrease a little and the baby spends less and less time on the breast
- Often the baby will pull off the breast after only a couple of minutes and then suck his hand
- Or the baby will just sit on the breast and suck and suck without drinking

Case #3: The light at the end of the tunnel

History

- Mother is 34 years old, P1G1
  - Pregnancy unremarkable, labour at term, no problems, lasting 7 hours with epidural anaesthesia
  - The baby is born well, weighing 4.32 kg at birth (9lb 8oz)

Immediate postpartum

- First try at the breast was 2 hours after birth (how many hours too late?)
  - The baby refused the breast
  - The baby is finger fed with formula (no expression of milk?)
  - The baby is discharged with the mother finger feeding at 4 days of age

After discharge

- The mother and baby are seen at another clinic, but there is no way to get the baby latched on
  - When the mother first comes to our clinic, she is bottle feeding expressed milk but also some formula
  - She had tried a nipple shield but it didn't work

First visit to clinic

- The baby is 37 days old and weighs 5.09 kg (11lb 3oz)
  - The mother has an abundant supply of milk
  - We could not even get the baby into breastfeeding position without his going completely ballistic
  - We tried only a couple of minutes

Suggestions

- Try the baby at the breast when he is calm and/or sleepy
  - Don't try to force him to take the breast
  - Skin to skin whenever possible
  - Since your milk production is abundant, the baby will likely take the breast soon

Email from mother

- My almost 8 week old baby has finally taken the breast today for almost an hour
- And just a while ago, he did it again and he is comfortable and he drinks well
- Yesterday, I told him that if he took the breast, I would nurse him for 2 or 3 years
- Of course, he couldn't understand, …but who knows?

Contact information

- My email: drjacknewman@sympatico.ca
- Our website: www.nbci.ca allows free access and contains:
  - information sheets in English and some in French, a few in Russian and Portuguese
  - video clips with explanatory texts in English, French, Spanish, Chinese, Russian, Portuguese, Italian, Indonesian, Arabic, Romanian and German
  - information about our teaching institute, including amongst many other programmes, a diploma course (click "institute" for more information)